

FAMILY CYPERACEAE IN KOLHAPUR AND ITS ENVIRONS¹

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This note is a continuation of our earlier communications on the flora of Kolhapur and its environs (Kulkarni & Mudgal 1970; Kulkarni 1971, 1974; Kulkarni & Desai 1972, 1974; Kulkarni & Kazi 1973; Thite & Kulkarni 1976 and Kulkarni & Thite 1979) and deals with family Cyperaceae which is represented by eight genera and 52 species according to a conservative estimate. The genera have been arranged in the order followed by Cooke (1908) and species within each genus are arranged alphabetically. Diagnostic characters of the species have been given only in those cases where their existence within Maharashtra has been regarded as doubtful or where there is confusion in the literature about their circumscription.

Kyllinga Rottb., *Pycurus* Beauv., and *Juncellus* Clarke are treated as subgenera of genus *Cyperus* Linn. The genus *Cyperus* comprises 24 out of 52 species reported here. The genus *Fimbristylis* Vahl is represented by 14 species and *Rhynchospora* Vahl, *Scleria* Berg. and *Carex* Linn. by one species each.

Identification of all the species included in this account has been confirmed by referring to the herbarium of Western Circle, BSI, Poona and Blatter herbarium of St. Xavier's College, Bombay. Recent changes in the nomenclature of identified taxa have been followed.

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A set of specimens, on which the present account is based, is deposited in the Department of Biological Sciences, Ramnarain Ruia College, Bombay.

Genus *Cyperus* Linn.

Sub-genus *Kyllinga*

CYPERUS BREVIFOLIUS (Rottb.) Hassk.
(*Kyllinga brevifolia* Rottb.)

In clayey soil along temporary water courses; University campus, Kolhapur; on the way to Wadanige near Kolhapur; Panhala; June-August.

C. KYLLINGA Endl. (*K. monocephala* Rottb.)
Common in grasslands of Katyayani, Panhala, Malvan, Savantwadi, Amboli; June-November.

C. METGII Hochst. (*K. squamulata* Vahl)
Along lake margin of Kagal near Kolhapur; August-October.

C. TRICEPS (Rottb.) Endl. (*K. triceps* Rottb.)

Fairly common in grasslands of Kolhapur, Kagal, Panhala; June-August.

Sub-genus *Pycurus*

C. ALBOMARGINATUS Mart. and Schrad. ex Nees

(*Pycurus albomarginatus* Nees). Along temporary ponds adjacent to sugarcane fields on Kolhapur-Panhala road; August-October.

C. FLAVESCENS Linn. (*P. flavescens* Linn.)
Plants slender, with filiform stem, leaves and bract; leaves shorter than the stem; bract single, erect; spikelet solitary; nuts with prominent glistening white transverse

ridges. In meadows of Kolhapur; August-September.

C. GLOBOSUS Ail. (*P. globosus* All.)

Quite common in clayey mud along temporary water courses and lake margins. Kolhapur—Rankala, Kalamba lakes, University campus; Kagal lake; on way to Wadanige; Panhala, Malvan; July-November. C. MALABARICUS Clarke (*P. malabaricus* Clarke)

Along streams, Radhanagari; August-October.

C. PUMILUS Linn. (*P. nitens* Nees)

Along marshes of Kagal lake; August-October.

Sub-genus *Juncellus*

C. ALOPECUROIDES Rottb. (*Juncellus alopecuroides* Clarke)

Robust perennial herb. Common in the marshes of ponds and lakes in Kolhapur, Wadanige, Kagal; September-April.

C. PYGMAEUS Rottb. (*J. pygmaeus* Clarke)

Tufted annual with conspicuous globose heads. Rajaram, Rankala and Wadanige lakes of Kolhapur, Kagal lake; June-October.

Sub-genus *Mariscus* Vahl.

C. CYPEROIDES (*Mariscus sieberianus* Nees)

Common in grass-lands of Panhala, Gaganbavada; Vengurla; July-November.

Sub-genus *Cyperus*

CYPERUS ALTERNIFOLIUS Linn.

Ornamental species cultivated in gardens of Kolhapur, Panhala; September-October.

C. ARENARIUS Retz.

Grows in association with *Ipomoea pes-caprae* on the sandy coast of Vengurla. This sand binding sedge is also reported from Konkan by Blatter & McCann (1934) though Cooke (1908) has not reported it from Maharashtra. Stoloniferous; leaves with sheathing base and linear rather fleshy lami-

na; stem round, green, fleshy and smooth; spikelets in globose heads subtended by 1-3 bracts one of which is erect appearing as if continuous with stem; glumes distichous, concave, membranous; keel 3 nerved, nerves pink; stamens 3; styles 3, pink; nut trigonous, dark-brown, smooth; October-November.

C. ARISTATUS Rottb.

Along the lake margins of Kolhapur, Rankala, Rajaram, Kalamba and Kagal; Bilashi; June-August.

C. COMPRESSUS Linn.

Seasonal, along lake margins, road sides and in rice fields of Kolhapur, Kagal, Panhala and Wadanige; June-October. This species shows distinct ecotypic variations. Populations occupying marshy habitat have robust erect plants, with branched spicate inflorescences. While those found along road sides have creeping habit with less branched inflorescence and smaller spikelets. Road side plants flower earlier than the marsh ones.

C. PANGOREI Rottb.

A robust perennial sedge very common in the marshes near ponds and lakes of Kolhapur, Kagal; August-March.

There appears to be a lot of confusion about circumscription of *C. corymbosus*. *C. tegetum*, *C. tegetiformis* and *C. pangorei*. While Cooke (1908) has considered all the three former species as distinct, Blatter & McCann (1934) have merged *C. tegetum* and *C. tegetiformis* with *C. corymbosus* and *C. pangorei* is considered as synonym of *C. tegetum*. Fischer (1928) regards *C. corymbosus* and *C. pangorei* as distinct but *C. tegetum* is considered as synonym of *C. pangorei* and *C. tegetiformis* as synonym of *C. corymbosus*. Kukenthal (1909) also treats *C. pangorei* and *C. corymbosus* as distinct. Our specimens resemble more closely with *C. pangorei*

in having lower bracts more than 12.7 cm long and longer than the inflorescence and in some-what remotely arranged scales on the spikelet than with *C. corymbosus* which has bracts upto 1.62 cm long and shorter than the inflorescence and the scales arranged mostly in densely imbricating fashion.

A systematic study of all the four taxa involved is needed to solve this problem.

C. DIFFORMIS Linn.

A seasonal, common in marshy places in Kolhapur; August-October.

C. DISTANS Linn.

Along nala, Gagan-Bavada; September-October.

C. ELUSINOIDES Kunth.

In marshes of Kagal lake near Kolhapur; September-November.

C. IRIA Linn. var. *PANICIFORMIS* Clarke.

A most common monsoon weed in rice fields and in other marshy situations; June-October.

C. PILOSUS Vahl.

A perennial salt marsh sedge; rhizome stoloniferous covered with scales; spikelets spicately arranged, rather distant on the hispidulous rachis, glumes faint brown, 3 nerved, keel not prominent, lateral sides transparent. Malvan; October.

C. ROTUNDUS Linn.

Prominent in clayey soil along margins of bunds, Kolhapur, Panhala, Gaganbavada, Kagal; June-October.

C. STOLONIFEROUS Retz. In marshes on way to Wadanige; June-October.

Fimbristylis Vahl

F. COMPLANATA Link.

Common in marshes of Kolhapur, Kagal lake, on way to Wadanige; July-September.

F. DICHOTOMA Vahl.

In association with *F. complanata* Vahl. but

in more abundance; Kolhapur, Katyayani, Wadanige, Kagal lake; July-March.

F. DIGITATA Boek.

In meadows at Radhanagari in monsoon; August-September. This species has also been collected recently in meadows on Ratnagiri-Pawas road in June.

F. DIPHYLLOIDES Vahl.

In marshes, often in association with *F. dichotoma* Vahl. Katyayani, on way to Wadanige,, Kagal lake, Radhanagari; July-March.

F. FERRUGINEA Vahl.

In marshes of Kolhapur and in salt marshes of Malvan and Ratnagiri; September-February.

F. JUNCIFORMIS Kunth.

In meadows of Kolhapur; June-October.

F. MILIACEA Vahl.

In marshes of Kolhapur, on way to Wadanige; July-September.

F. MONOSTACHYA Hassk.

In meadows; Kolhapur, Panhala; August-October.

F. POLYTRICHOIDES R. Br.

Along the margins of lakes of Kolhapur, and in salt marshes at Malvan; August-October.

F. QUINQUANGULARIS Kunth.

In marshes of Kolhapur; July-September.

F. SPATHACEA Roth.

In salt marshes of Malvan; along nala at Savantwadi; October-December.

F. TENERA Roem and Sch.

Along lake margins, Rankala, Kagal-lake; August-December.

F. TETRAGONA R. Br.

In marshes and lake margins; Kolhapur, Kagal, Radhanagari; July-September. Cooke (1908) and Fischer (1928) have placed this species in *dichostylis* section of the genus. All the specimens observed by us in field

as well as pressed ones show three stigmas. The identification of our material has been checked with reference to the sheets of this species in BSI herbarium of western circle and Blatter herbarium of St. Xavier's College.

F. WOODROWII Clarke.

Occasional, along margins of Kolhapur lakes; June-October.

Eleocharis R. Br.

E. ATROPURPUREA Kunth.

In marshes of lake margins of Kolhapur, Rajaram talao, Rankala talao; July-October.

E. CAPITATA R. Br.

Lake margin of Kagal and salt marshes of Malvan; September to January.

E. PLANTAGINEA R. Br.

Very dominant sedge in lakes of Kolhapur. Rankala, Kagal lake, also in salt marshes of Malvan; August-March.

Scirpus Linn.

S. ARTICULATUS Linn.

In salt marshes of Malvan; October.

S. KYLLINGOIDES Boeck.

In meadows of Kolhapur; June-August.

This species is being reported for the first time from Maharashtra. Cooke (1908) has remarked that he could not see the specimens of this species from Bombay state. Blatter & McCann (1934, 1935) have recorded it from Canara. Fischer (1928) has not included it in flora of Madras. Shah (1973) has recently described it from Saurashtra. During our recent visit to Ratnagiri we collected it in meadows along Ratnagiri—Pawas road. A brief description of the species based on our specimens, follows

Rhizomatous herbs; rhizome short, erect and thick; stems 4 to 9 cm., solitary or tufted, trigonous and terete. Leaves radicular, lamina

with marginal spinules. Inflorescence terminal, of numerous small sessile conjoined white heads, subtended by 3 spreading leaf-like bracts. Spikelets with 8-12, spirally arranged, ovate-lanceolate keeled many nerved glumes. Hypogynous bristles 0. Stamen 1, ovary trigonous, stigmas 3. Nut yellow, obovoid, minutely punctate.

S. LITTORALIS Schrad.

Along marshes of Kagal lake and in salt marshes of Malvan; August-March.

S. MUCRONATUS Linn.

Along Panchaganga river bank; October-May. This species has been excluded from Bombay state by Cooke (1908). Shah (1973) has reported it from Gujarat.

Stems robust, sharply trigonous; leaves reduced to sheaths, heads lateral near the apex of the stem, spikelets sessile, ovate, glumes ovate, acute, keel not prominent; hypogynous bristles 5, barbed with recurved outgrowths, slightly longer than the nut; ovary trigonous, style base not swollen, stigmas 3; nut trigonous, flat on one side and angled on the other, blackish, surface with faint lines.

S. SQUARROSUS Linn.

In hydrophytic situations during monsoon in Kolhapur, Bilashi and Ratnagiri; August-October.

S. SUPINUS Linn.

Common in the marshes of lakes of Kolhapur, Kagal, in marshes of Sangli and Malvan; July-February.

Fuirena Rottb.

F. GLOMERATA Lam.

In salt marshes of Malvan and Vengurla; September-November.

F. WALLICHIANA Kunth.

In the marshes of Kagal lake; August-October.

Rhynchospora Vahl.

R. WIGHTIANA Steud.
In meadows, Malvan; October.

Scleria Berg.

S. STOCKSIANA Boek.
The moist areas around ponds and lakes of Kolhapur; near Dhamapur lake, Malvan; August-October.

Carex Linn.

C. MERCARENSIS Hochst.

As an undergrowth in forests of Gaganbavada, Katyayani; October-February.

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